

Relative Humidity effect on the Performance of Floating Liquefaction Natural gas Cycle

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This study presents the optimal design and operational parameters for a single mixed refrigerant (SMR) liquefaction process at an offshore site under varying relative humidity (RH). It was found that RH affects the performance of the liquefaction cycle by effecting the air coolers and other compression units. This open the door for the researchers to find the correlation between changes in the RH and liquefaction cycle performance. A SMR process for the natural gas liquefaction was simulated in Aspen. Then a simulated annealing (SA) optimization algorithm was used for getting the optimal operational parameters affecting the process. The results of this study can provide insight about taking the advantage of low or high relative humidity for process engineers associated with FLNG liquefaction plants. This research was supported by a grant from the Gas Plant R&D Center funded by the Ministry of Land, Transportation and Maritime Affairs (MLTM) of the Korean government and also was supported by Priority Research Centers Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (2014R1A6A1031189).